SVKM's
D. J. Sanghvi College of Engineering

Program: B.Tech in Electronics Engineering **Academic Year: 2022** **Duration: 3 hours**
Date: 07.01.2023
Time: 10:30 am to 01:30 pm
Subject: Design with Linear Integrated Circuits (Semester V) **Marks: 75**

Instructions: Candidates should read carefully the instructions printed on the question paper and on the cover page of the Answer Book, which is provided for their use.
(1) This question paper contains two pages.
(2) All Questions are Compulsory.
(3) All questions carry equal marks.
(4) Answer to each new question is to be started on a fresh page.
(5) Figures in the brackets on the right indicate full marks.
(6) Assume suitable data wherever required, but justify it.
(7) Draw the neat labelled diagrams, wherever necessary.

Question No.		Max. Marks
Q1 (a)	List the ideal Opamp characteristics and their ideal values. **OR** Explain the input offset voltage, input bias current, and PSRR for OPAMP.	[05] [05]
Q1 (b)	Discuss classification of active filters and explain the frequency response of each type.	[10]
Q2 (a)	Write a short note on logarithmic converters and antilog converters. **OR** Write a short note on Inverting and Non – inverting Schmitt Trigger. Explain how thresholds can be adjusted.	[10] [10]
Q2 (b)	Design Wein Bridge Oscillator for f=1KHz	[05]
Q3 (a)	Sketch the functional block diagram of IC 723 DC voltage regulator and list its important features. **OR** Sketch the functional block diagram of IC 555 timer.	[05] [05]
Q3 (b)	Define load regulation and line regulation. Design an adjustable voltage regulator for Vo=20V using IC78XX series.	[10]
Q4	Explain with neat diagram the following: i. peak detector circuit. ii. Sample and hold circuit iii. Current amplifier	 [05] [05] [05]
Q5 (a)	Design an appropriate circuit using IC555 such that the Green LED is ON for 0.4 msec and then Red LED is ON for 0.6 msec. Both LEDs should not be simultaneously ON. Assume supply voltage of IC555 is 10 V.	[05]
Q5 (b)	i. List the various techniques of analog to digital convertor. Explain Flash ADC in brief. ii. Explain the V to I convertor. **OR** i. Explain the practical integrator. ii. Design a window detector for ± 2volts	[05] [05] [05] [05]